1. (Twice Amended) Device for temperature measurement comprising:

a) a detector for receiving heat radiation emanating from a measurement spot on an object of measurement,

b) an optical system for imaging the heat radiation emanating from the measurement spot onto the detector

c) and a sighting arrangement having a laser aligned to illuminate a diffractive optical system to produce a light intensity distribution of more than two visible dots for identifying the position and size of the measurement spot on the object of measurement by means of visible light.

2. (Twice Amended) Device as claimed in Claim 1, wherein the sighting arrangement also has at least one additional refracting [and/]or reflecting optical element.

3. (Amended) Device as claimed in Claim 1, wherein the diffractive optical system is formed by a holographic element.

4. (Amended) Device as claimed in Claim 1, wherein the light intensity distribution on the object of measurement forms an annular marking.

5. (Amended) Device as claimed in Claim 4, wherein the sight intensity distribution is formed by at least two circular markings which are arranged concentrically with respect to one another.

6. (Amended) Device as claimed in Claim 4 or 5, wherein the light intensity distribution also has a further marking which represents the centre of the measurement spot.

7. (Twice Amended) Device as claimed in Claim 1, wherein the [diffractive optical system that the] light intensity distribution on the object of measurement forms a cross-shaped marking.

B1 cond.

8. (Twice Amended) Device as claimed in Claim 5, wherein an [the] annular concentric markings in each case identify a region of the measurement spot from which a certain percentage of the energy of the received heat radiation originates.

9. (Amended) Device as claimed in Claim 2 , wherein optical element has a focus plane, wherein one circular marking identifies the measurement spot lying between the optical element and the focus plane and the other marking identifies the measurement spot lying behind the focus plane when viewed from the optical element.

B2

11. (Amended) Device as claimed in Claim 1, wherein a beam divider which is transparent for the visible light and reflective for the heat radiation emanating from the object of measurement is disposed in the beam path of the sighting arrangement.

B3

13. (Amended) Device as claimed in Claim 1, wherein the beam divider is disposed between the optical element and the object of measurement.

Please add the following new claims:

B4

--16. (New) A method for outlining an energy zone on a surface whose temperature is to be measured using the combination of a radiometer and a laser aiming device, said method comprising the steps of providing said laser device associated with said

radiometer, and causing said device to emit simultaneously a plurality of more than two laser beams towards said surface to strike said surface at individual mutually spaced locations to outline said energy zone.

17. (New) The method of claim 1, wherein said method further comprises the steps of projecting a laser beam towards said surface and subdividing said laser beam with a diffraction device to provide said plurality of more than two laser beams.

B4 cont'd

18. (New) A combination of a radiometer and apparatus for outlining an energy zone on a surface whose temperature is to be measured using said radiometer, said apparatus comprising: a laser sighting device cooperating with said radiometer, said laser sighting device including a device for emitting simultaneously a plurality of more than two laser beams to strike said surface at individually spaced apart locations serving to outline said energy zone.

19. (New) The apparatus of claim 18, said radiometer being positioned with said plurality of laser beams emitted by said laser sighting device.

20. (New) A combination of a radiometer and apparatus for outlining the extent of an energy zone whose temperature is to be measured using said radiometer, said apparatus comprising:

a laser sighting device cooperating with said radiometer and arranged to emit simultaneously more than two laser beams toward said energy zone and

a mirror modifying said laser beams and directing said modified beams along a central axis of said radiometer towards the energy zone to illuminate a broken line about said energy zone.

21. (New) A combination of a radiometer and apparatus for visibly outlining an energy zone on a surface whose temperature is to be measured using said radiometer, said apparatus comprising:

a laser sighting device for emitting simultaneously more than two laser beams against said surface and a device for positioning said laser beams about the energy zone to outline visibly the periphery of said energy zone.

22. (New) A method for identifying the extent of a radiation zone on an area whose temperature is to be measured using a radiometer, said method comprising the steps of:

providing a sighting device for use in combination with said radiometer, said device generating a laser beam;

providing a diffraction device as part of said sighting device; and

simultaneously splitting said laser beam with said diffraction device into more than two beams, and positioning said beams toward said area to identify the extent of said radiation zone.

23. (New) A method for visibly outlining an energy zone on a surface whose temperature is to be measured using a radiometer, said method comprising the steps of:

providing a sighting device for use in combination with said radiometer, said device generating a laser beam;

splitting said laser beam into more than two split laser lines; and

simultaneously directing said more than two laser lines toward said surface, and positioning said laser lines to outline visibly the periphery of said zone.

24. (New) Apparatus in combination with a radiometer for identifying a radiation zone in an area whose temperature is to be measured using said radiometer, said apparatus comprising a laser sighting device in combination with said radiometer, said laser sighting device including:

a device for generating a laser beam;

a diffraction device for splitting said laser beam into more than two beams; and

a device for simultaneously positioning said more than two beams to outline the periphery of said radiation zone.

25. (New) Apparatus in combination with a radiometer for visibly outlining an energy zone on a surface whose temperature is to be measured using said radiometer, said apparatus comprising a laser sighting device in combination with said radiometer, said laser sighting device including:

B4 cont.

a device for generating a laser beam;

a diffraction device for splitting said laser beam into more than two split laser lines;

a device for simultaneously directing said more than two laser lines toward said surface; and

a device for simultaneously positioning said lines to outline visibly the periphery of said energy zone.

26. (New) Apparatus in combination with a radiometer for identifying the extent of an energy zone whose temperature is to be measured using said radiometer, said apparatus comprising:

a laser sighting device cooperating with said radiometer for emitting more than two simultaneous laser beams toward said energy zone along different paths; and

a device for adjusting the paths of said laser beams to outline the periphery of said zone.

27. (New) A method for identifying an energy zone whose temperature is to be measured using a radiometer, said method comprising the steps of:

providing a laser sighting device in combination with said radiometer;

causing said sighting device to emit more than two simultaneous laser beams toward said surface along different paths; and

adjusting said paths of said laser beams to outline visibly the periphery of said zone.

28. (New) A combination of a radiometer and apparatus for outlining an energy zone whose temperature is to be measured using a radiometer, said apparatus including:

a laser sighting device for simultaneously emitting more than two laser beams toward said surface; and

a device for adjusting said laser beams to outline visibly the periphery of said energy zone.

BY cont

29. (New) A method for outlining an energy zone on a surface whose temperature is to be measured using the combination of a temperature measurement device and a laser sighting device, said method comprising the steps of providing a laser sighting device associated with said temperature measurement device and causing said laser device to emit a plurality of at least three laser beams toward said surface to strike said surface simultaneously at mutually spaced locations serving to outline said energy zone.

30. (New) The method of claim 29, wherein said method further comprises the steps of causing said laser device to project a primary laser beam toward said surface and subdividing said primary laser beam with a beam splitter to provide said at least three laser beams.

31.(New) A method for outlining an energy zone on a surface whose temperature is to be measured using the combination of a temperature measurement device and

a sighting device, said method comprising the steps of providing a laser sighting device and a temperature measurement device, causing said laser device to emit at least one primary laser beam; passing said primary laser beam across a diffraction grating to subdivide said primary beam into a plurality of at least three secondary laser beams, and directing said secondary laser beams toward said surface to strike said surface simultaneously at spaced locations serving to outline said energy zone.

32. (New) The combination of a temperature measurement device and an apparatus for outlining an energy zone on a surface whose temperature is to be measured using said temperature measurement device, said apparatus comprising a laser sighting device co-operating with said temperature measurement device for emitting at least one primary laser beam toward said surface, and for producing a plurality of at least three laser beams from said primary laser beam to strike said surface simultaneously at spaced apart locations serving to outline said energy zone.

B4 Cont.

33. (New) The combination of claim 32 wherein said laser sighting device includes a beam splitter disposed between said temperature measurement device and said surface.

34. (New) The combination of claim 33 wherein said temperature measurement device is positioned on the central longitudinal axis of said plurality of laser beams downstream of said beam splitter.

35. (New) The combination of claim 32 wherein said temperature measurement device is positioned laterally of said sighting device.

36. (New) The combination of claim 32 wherein said temperature measurement device is positioned between said plurality of laser beams.

37. (New) The combination of a temperature measurement device and a laser sighting device for outlining an energy zone on a surface whose temperature is to be measured using said temperature measurement device, said laser sighting device co-operating with said temperature measurement device, said sighting device projecting at least one primary laser beam toward said surface, and a diffraction beam splitter disposed between said laser sighting device and said surface to be struck by said primary laser beam to subdivide said primary beam into a plurality of at least three secondary laser beams to strike said surface simultaneously at spaced apart locations serving to outline said energy zone.

B4 cont.

38. (New) A method of measuring and displaying surface temperature of a defined energy zone with a radiation pyrometer comprising:

pointing the pyrometer in the direction of said energy zone;

directing a plurality of at least three laser beams from a laser generator system to form simultaneously a plurality of at least three visible spots at said zone to identify most of said zone where temperature is to be measured;

locating said pyrometer and said generator system as a functional combination to direct said beams toward said so that said spots outline said zone measured by said pyrometer; and

measuring and displaying the surface temperature of said zone with said pyrometer.

39. (New) A method according to claim 38 in which at least one beam from said generator system is split by a diffraction device.

40. (New) The combination of a radiation pyrometer and a laser beam generator cooperating with said pyrometer for measuring and displaying temperature across a surface in an energy zone; the combination further including a pistol grip for directing said pyrometer toward said surface; and a beam splitter for directing a plurality of at least three laser beams from said generator simultaneously along a path between said surface and said pyrometer so as to display a visible laser spot pattern around said zone from which said pyrometer measures and displays temperature.

B4 cont.

41. (New) The combination of a temperature measurement device and a laser sighting device cooperating with said measurement device for outlining an energy zone to be measured by said temperature measurement device when measuring the temperature of a surface, said sighting device projecting more than two laser beams simultaneously toward said surface and causing said laser beams to outline the periphery of said zone.

42. (New) The combination of a laser sighting device for visibly outlining an energy zone surface to be measured and a temperature measurement device measuring the temperature of said surface, said sighting device cooperating with said measurement device, said sighting device generating more than two laser beams to project simultaneously toward said surface so as to outline the periphery of said zone.

43. (New) The combination of a laser sighting device for identifying and defining the center and periphery of an energy zone to be measured, and a radiometer for measuring the temperature of said zone on a surface, said sighting device cooperating with said radiometer, said device includes:

means for projecting simultaneously more than two laser beams toward said surface; and

means for causing said laser beams to identify and define both the center and periphery of said energy zone.

44. (New) The combination of a laser sighting device for identifying the center of an energy zone on a surface and for outlining the periphery of said energy zone, with a temperature measuring device, said sighting device cooperating with said measurement device, said sighting device includes:

means for projecting at least one laser beam toward said surface to identify the center of said energy zone and

means for projecting more than two other laser beams simultaneously toward said surface to outline the periphery of said energy zone on said surface.

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45. (New) The combination of a temperature measurement device and a laser sighting device for visibly identifying an energy zone on a surface whose temperature is to be measured, said sighting device cooperating with said measurement device, said sighting device simultaneously emitting at least three laser beams against said surface, said beams being positioned to be divergent with respect to the energy zone, to outline visibly the periphery of said zone.

46. (New) The combination of a temperature measurement device having an axis and a laser sighting device for identifying the extent of an energy zone whose temperature is to be measured using said measurement device, said laser sighting device co-operating with said measurement device, and said sighting device emitting at least three laser beams simultaneously in a circular pattern along the axis of the measurement device to form an illuminated ring at said energy zone defining the extent of the zone to be measured.

47. (New) The combination of a temperature measurement device and a laser sighting device co-operating with said measurement device, said sighting device emitting simultaneously at least three laser beams toward an energy zone to mark the edge of an area of said zone which is to be measured by said measurement device.

48. (New) The combination of a temperature measurement device and a laser sighting device cooperating with said measurement device for emitting simultaneously more than two laser beams against a surface, the combination further including means for positioning said laser beams about the energy zone to outline visibly the periphery of said energy zone.

B4 cont

49. (New) The combination as claimed in claim 48, wherein said means for positioning said laser beams comprises a one hand pistol grip means integral with said combination.

50. (New) A method for identifying the extent of a radiation zone on a surface whose temperature is to be measured, using a temperature measurement device, said method comprising the steps of:

providing a sighting device for use in combination with said temperature measurement device, said sighting device generating a laser beam;

splitting said laser beam into more than two components; and

simultaneously directing said components toward said zone to identify the extent of said radiation zone.

51. (New) A method for identifying the extent of a radiation zone on a surface whose temperature is to be measured using a temperature measurement device, said method comprising the steps of:

providing a sighting device for use in combination with said temperature measurement device, said sighting device generating a laser beam;

directing said beam toward said zone to form a visible circular light pattern on said surface to identify the extent of said zone.

52. (New) A method of visibly outlining an energy zone on a surface whose temperature is to be measured using a temperature measurement device, said method comprising the steps of:

providing a sighting device for use in combination with said measurement device, said sighting device generating a laser beam;

splitting said laser beam into more than two split laser lines; and

simultaneously directing said laser lines toward said surface to outline visibly the periphery of said energy zone.

53. (New) A method for identifying an energy zone whose temperature is to be measured using a temperature measurement device, said method comprising the steps of:

providing a sighting device for use in combination with said measurement device, said sighting device generating a laser beam;

splitting said laser beam into at least three split laser lines;

simultaneously directing said laser lines toward said zone; and

positioning said laser lines to identify the periphery of said zone.

54. (New) The combination of a temperature measurement device for identifying a radiation zone in an area whose temperature is to be measured by said

measurement device, and a laser sighting device for use with said measurement device, said laser sighting device includes:

means for generating a laser beam; means for splitting said laser beam into more than two components; and

means for simultaneously positioning said components on said area to identify the extent of said radiation zone.

55. (New) The combination of a temperature measurement device and a sighting device for visibly outlining an energy zone on a surface whose temperature is to be measured using said measurement device, said sighting device includes:

means for generating a laser beam;

means for splitting said laser beam into more than two split laser lines;

means for directing said laser lines simultaneously toward said surface; and

means for positioning said laser lines to outline visibly the periphery of said energy zone.

B4 cont.

56. (New) The combination of a temperature measurement device and a sighting device for identifying the extent of an energy zone whose temperature is to be measured using said measurement device, said sighting device emitting more than two laser beams simultaneously toward said energy zone along separate paths; and means for adjusting said paths of said laser beams to outline the periphery of said zone.

57. (New) The combination of a temperature measurement device and a sighting device which emits laser light toward a surface of which the temperature is to be measured by said measurement device, said sighting device further positioning said laser light in a visible circular pattern on said surface to outline a temperature measurement zone.

58. (New) A method for identifying an energy zone whose temperature is to be measured using a radiometer, said method comprising the steps of:

providing a laser sighting device in cooperation with said radiometer;

causing said sighting device to emit simultaneously more than two laser beams toward said surface along separate paths;

adjusting said paths of said laser beams to outline visibly the periphery of said energy zone.

59. (New) The combination of:

a temperature measurement device responsive to infrared radiation from an energy zone on a surface to be measured,and a sighting device cooperating with said measurement device for ascertaining the position and size of the energy zone on said surface to be measured by emitting visible laser light, said sighting device including a beam splitter element which receives said visible light and simultaneously projects more than two laser beams toward said surface for outlining visibly the periphery of said zone.

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60. (New) The combination of a temperature measurement device and a sighting device for visibly outlining an energy zone to be measured when measuring the temperature of a surface, said sighting device for visibly outlining cooperating with said measurement device and including means for projecting more than two laser beams simultaneously toward said surface, and means for causing said laser beams to strike the periphery of said zone, thus visibly outlining said zone.

61. (New) The combination of claim 60 wherein said sighting device further includes means for projecting at least one laser beam to identify the center of said zone.

62. (New) The combination of a temperature measurement device comprising a detector for receiving heat radiation from a measuring zone of an object under examination, and a direction finder sighting device including a light source, said sighting device further including a beam splitter providing at least three simultaneous sub-divisional light beams to strike the object and show thereon at least three separate illuminated areas at the periphery of and enclosing and defining the measuring zone.

63. (New) A method for visibly outlining an energy zone on a surface where temperature is to be measured using a temperature measurement device, said method comprising the steps of:

providing a laser sighting device cooperating with said measurement device, and with a laser beam splitting device;

emitting more than two simultaneous laser beams from said splitting device to strike said surface about the periphery of said zone at more than two spots positioned so as to outline said zone.

64. (New) The combination of a temperature measurement device and a laser sighting device for visibly outlining an energy zone on a sighting surface where temperature is to be measured using said measurement device,

said laser sighting device co-operating with said measurement device,

said sighting device emitting more than two laser beams simultaneously against said surface;

and said combination further including a beam splitter for positioning said laser beams about said energy zone to outline visibly the periphery of said zone.

65. (New) The combination of claim 64, wherein said beam splitter for positioning said laser beams comprises a splitter which is adapted to produce said more than two beams which are then directed against said surface to define the energy zone.

66. (New) A hand held temperature measuring unit comprising a temperature measurement device said device including:

a support structure with an infrared opening, and an infrared sensor located on said support structure, comprising a detector, with infrared radiation emitted from an energy zone disposed along an axis of said structure passing through said infrared opening onto said detector; and a light beam splitter assembly, including a beam splitter for splitting an incident light beam into more than two beams directed simultaneously toward said zone to define said zone by peripherally outlining said zone.

B4 cont.

67. (New) The combination as claimed in claim 66, wherein said beam splitter is an optic element.

68. (New) The combination, as claimed in claim 66, wherein said beam splitter assembly is a diffraction optic.

69. (New) The combination according to claim 66 in which more than two spots are formed on said zone by said beams, and wherein at least two spots outline the energy zone and one other spot also identifies the center of said zone.

70. (New) The combination of a temperature measuring device and a sight for aiming said device and for identifying an energy zone, said device comprising:

an elongated hollow body having an infrared opening at one end; and

an infrared sensor, located within said opening, comprising a detector, receiving infrared radiation emitted from a remote energy zone, and disposed along a geometric axis of said body, with infrared radiation passing through said infrared opening onto said detector; and said aiming sight comprising:

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a light beam splitter assembly, including a beam splitter, splitting incident light simultaneously into more than two beams, displaced from said axis and directed simultaneously toward said zone, to define said zone.

71. (New) The combination, as claimed in claim 70, wherein said beam splitter is an optic element.

72. (New) The combination, as claimed in claim 70, wherein said beam splitter assembly is a diffraction optic.

73. (New) The combination of a light source aiming device and a hand held temperature measuring unit for measuring an energy zone on a target, said unit comprising:

an elongated body having an infrared opening at one end; and said aiming device comprising:

a light beam generator providing a light beam,

a beam splitter receiving said beam, and

a device simultaneously aiming more than two light beams emitted by said splitter to define an energy zone by projecting a light intensity distribution pattern as spots on said zone on said target.

74. (New) The combination, as claimed in claim 73, wherein said beam splitter is an optic element.

75. (New) The combination, as claimed in claim 73, wherein said beam splitter is a diffraction optic which projects said light intensity distribution pattern.

B4 cont.

76. (New) The combination according to claim 73 in which the spots form an annular marking light distribution.

77. (New) The combination of a hand-held temperature measuring unit and an aiming device, said unit comprising:

a support body having an infrared opening;

an infrared light sensor carried by said support body and including a detector spaced from said infrared opening along an axis to receive infrared radiation, emitted from an area of a target, passing through said infrared opening onto said detector; and said device comprising:

a light beam splitter assembly including a beam splitter for splitting an incident beam of light into more than two beams simultaneously directed toward said area to define said area by peripherally outlining said area.

78. (New) A method of measuring a defined energy zone with a temperature measurement device comprising:

a) pointing said measurement device in the direction of said energy zone on a surface;

b) directing toward said surface a plurality of more than two simultaneous laser beams from a diffraction device in a laser generator system cooperating with said measurement

device to form a plurality of visible spots on said surface to identify most of said zone where temperature is to be measured; and

c) locating said measurement device and said generator system as a functional combination to direct said beams toward said energy zone so that said spots outline said zone.

79. (New) A method of measuring and displaying a temperature of a surface in a defined energy zone with a radiation pyrometer comprising:

a) pointing the pyrometer in the direction of said energy zone on said surface;

b) directing more than two simultaneous laser beams from a laser generator system to impinge a plurality of visible spots on said zone to identify said zone where temperature is to be measured;

c) locating said pyrometer and said generator system as a functional combination to direct said beams toward said energy zone so that said spots outline said zone measured by said pyrometer; and measuring and displaying the surface temperature using said pyrometer.

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80. (New) The combination of:

a temperature measurement device for measuring the intensity of detected radiation; and

a laser sighting device cooperating with said measurement device for directing simultaneously more than two laser beams along axes in the direction of the radiation to be detected to define the limits of the zone of radiation to be measured.

81. (New) The combination of a hand held temperature measurement device and a sighting device which emits visible light toward a surface on which temperature is to be measured by said measurement device, said sighting device comprising:

a sight integral with said measurement device;